



Santa Fe County Utilities Department

2011 Water Quality Report

*West Sector
NM3500926*

Santa Fe County
Utilities Department



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County of Santa Fe 2011 Water Quality Report

Santa Fe County Utilities Department (SFCUD) is pleased to present to our customers and the public the 2011 Water Quality Report for the West Sector Service Area. A safe and dependable water supply is vital to our community and is the primary mission of Santa Fe County. In 2011, the County's drinking water met all U.S. Environmental Protection Agency (EPA) and New Mexico drinking water quality limits. This report is designed to inform you about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. The West Sector of the Santa Fe County Utility water system serves El Prado, La Serena, La Vida, Los Sueños & Sonrisa subdivisions. We want the public to understand the commitment we make to continually improve the supply and distribution of water and the efforts to protect our water resources. This report is a snapshot of last year's water quality.

Source of Supply

Four distinct sources currently supplied water to the Santa Fe County Utility in 2011. The 17,000 acre Santa Fe Watershed provides surface runoff to the Santa Fe River where it is stored in the McClure and Nichols Reservoir prior to treatment. Surface water from the Santa Fe River and Rio Grande is treated through conventional and advanced treatment processes at the Canyon Road Water Treatment Plant and Buckman Regional Water Treatment Plant (BRWTP), respectively. The City Well Field is mostly



McClure Reservoir

located in close proximity to the Santa Fe River and consists of 8 active wells located within the City limits of Santa Fe. The Buckman Well Field consists of 13 wells located near the Rio Grande, approximately 15 miles northwest of the City of Santa Fe.

In 2011, the Buckman Direct Diversion (BDD) Project surface water supply was successfully integrated into the municipal distribution system and operated in conjunction with the City of Santa Fe Well Fields and Reservoirs. The surface water treated at the BRWTP is taken directly from the Rio Grande.

En Español

Este reporte contiene información importante sobre la calidad del agua en Santa Fe. Si tiene alguna pregunta o duda sobre este reporte, hable a Millie Valdivia al teléfono 505-992-9870.

The BDD not only improves sustainability for the area but also increases resilience under drought conditions. Reducing groundwater pumping, that cannot be sustained, makes water from wells available as drought and emergency reserves rather than sources used to meet daily water demands. All four sources are treated with chlorine which is used for disinfection and pathogenic microorganism removal. Fluoride is added to the water supply to benefit the community as recommended by public health professionals.

Is my water safe?

We are proud to announce in 2011 the county’s drinking water supply met all U.S. Environmental Protection Agency (EPA) and New Mexico drinking water quality limits. We are committed to ensuring the quality of your water.

Source Water Assessment and Availability.

The New Mexico Environment Department (NMED) completed the Source Water Assessment to determine source water protection areas and an inventory of contaminant sources within the areas of concern. NMED concluded: “The Susceptibility Analysis of the City of Santa Fe utility reveals that the utility is well maintained and operated, and the sources of drinking water are generally protected from potential sources of contamination based on an evaluation of the available information.



The susceptibility rank of the entire water system is **moderately low.**” A copy of the Assessment is available by contacting NMED at 476-8631.

Why are there contaminants in my drinking water?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can also pick up substances resulting from the presence of animals or from human activity. This can include:

Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally occurring, or result from urban storm-water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides may come from a variety of sources, such as agriculture, urban storm-water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants can be naturally occurring, or the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Voluntary Monitoring

In cooperation with Los Alamos National Laboratory (LANL) and New Mexico Environment Department, the City of Santa Fe continues to monitor Buckman Wells 1, 2 and 8 for LANL derived contamination. Samples have been analyzed for radiological particles, general inorganic, metals, high explosives and organics. The results indicate detectable levels of radionuclides associated with natural sources. No Laboratory-derived radionuclides were detected in 2011. Repeat sampling since 2001 indicates Laboratory-derived radionuclides are not present in the Buckman Wells 1, 2 and 8. These wells are part of 13 wells that make-up the Buckman Well Field. When required, water from these wells is delivered to the Buckman Tank prior to distribution into the system.

Arsenic

Arsenic occurs naturally in the earth’s crust. When these arsenic-containing rocks, minerals, and soil erode, they release arsenic into ground water. The drinking water standard for arsenic is 10 parts per billion or 10 µg/l. The SFCWU drinking water met this standard in 2011. While our drinking water meets EPA’s standard, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects such as skin damage and circulatory problems.

Cryptosporidium

Cryptosporidium is a protozoan parasite that is introduced into our source waters via wild animal populations. The oocyst is the transmission stage of the organism. Although the organism is readily removed by the conventional treatment process utilized at the Canyon Road Water Treatment facility, the oocyst is resistant to chemical disinfectants like chlorine and the primary reason to determine if additional treatment is required. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection.

In April 2007 the City began a two-year study to determine the average *Cryptosporidium* concentration in source water entering the Canyon Road Water Treatment facility. The sampling portion of the study was completed in March of 2009. The study is part of the requirements contained in the 2006 USEPA Long-Term Enhanced Surface Water Treatment Rule. *Cryptosporidium* was detected in a single untreated sample in each of the following months: December of 2007, September 2008 and October 2008. The highest 12-month consecutive mean for this study was 0.018 oocysts/L. Since the concentration is <0.075 oocysts/L, no additional treatment at the Canyon Road Water Treatment Facility will be required.

Any new water system treating surface water, such as Buckman Regional Water Treatment Plant, is required to monitor cryptosporidium for 24 consecutive months. Untreated raw Rio Grande water tested at the BDD for cryptosporidium range from 0 to 1 Oocysts per 10 liters.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Important Drinking Water Definitions:

MCL: *Maximum Contaminant Level* - (mandatory language) The “Maximum Allowed” (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG: *Maximum Contaminant Level Goal* - (mandatory language) The “Goal”(MCLG) is the level of a contaminant in drinking water below, which there is no known or expected risk to health. MCLGs allow for a margin of safety.

AL: *Action Level* - the concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

TT: *Treatment Technique* - (mandatory language) a treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

PPM: *Parts per million or Milligrams per liter (mg/l)* - one part in a million parts.

PPB: *Parts per billion (ppb) or Micrograms per liter (µg/l)* - one part in a billion parts

Nitrates

Santa Fe County drinking water meets the federal drinking water standard of 10 ppm for nitrates. Nitrates have been detected in some of the City Wells above 5 ppm. Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

TABLE 2—Results of Disinfection By-Product and Additive Testing

West Sector Disinfection By-Product	Units	MCL	Result	Range		Sample Date	Typical Source
				Low	High		
Total Haloacetic Acids (HAA5)	ppb	60	6.42	0.98	10.9	Quarterly	By-product of drinking water chlorination.
Total Trihalomethanes (TTHM)	ppb	80	18.39	3.2	32	Quarterly	By-product of drinking water chlorination.
Total Chlorine Residual	ppb	4	0.56	0.13	1.20	Monthly	Water additive use to control microbes

Disinfection By-Products (DPBs)

Santa Fe County has been testing for total Trihalomethanes (TTHMs) and haloacetic acids (HAA5s) , with results listed in Table 2, have revealed low levels of each. Trihalomethanes (THMs) and Haloacetic Acids (HAA5) are two groups of chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. Some studies have suggested a possible link between high levels of TTHMs and adverse effects on reproductive health, including low birth weight and miscarriage. These research findings have not been confirmed, but studies are continuing and the EPA is considering newer, more restrictive standards for TTHMs.

Lead and Copper Sampling

Tests for lead and copper are taken from customer taps located throughout the County system. Samples were pulled in 2010 and reported in Table 3 below.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and

young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Santa Fe County Utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

Contacts for Additional Information

This report provides details regarding our water quality and what it means. If you have any questions about this report, concerns regarding your water utility, or would like to learn more about the County's plans for the future water supply, please contact the Santa Fe County Utilities Department at 992-9870 or at www.santafecounty.org. We want our valued customers to be informed about their water quality as well as their utility. If you want to be in-

involved, please attend any of the Santa Fe County Commission meetings, our governing body, which has regularly scheduled meetings the second and last Tuesday of each month starting at 2:00 PM and 1:00 PM respectively.

Helpful Web Sites

Santa Fe County Utilities Department

www.santafecounty.org.

New Mexico Environment Department

<http://www.nmenv.state.nm.us>

Environmental Protection Agency

Drinking Water

www.epa.gov/safewater

U.S. Geological Survey

<http://nm.water.usgs.gov>

Center for Disease Control

<http://www.cdc.gov>

Lead and Copper Action Level

The lead and copper levels reported are values for the 90th percentile which in this case is the 4th sample.

AL = Action Level

2011 City of Santa Fe and Buckman Direct Diversion Water Quality Table

Table 4 on the following page is a list of contaminants which:

- 1) Have associated Primary Maximum Contaminant Levels (MCLs) that are regulated and;
- 2) Were detected in testing conducted by the City of Santa Fe and the New Mexico Environment Department. Contaminants were detected at or above detection limits established by the USEPA in calendar year 2010 or the most recent test if a sample was not analyzed in 2010.

The compounds detected represent a small fraction of the substances that were tested for. Testing is required for over 80 contaminants. The EPA requires monitoring for certain contaminants less than once per year because the concentrations are not expected to vary significantly from year to year. Drinking water, including bottled, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses health risk.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791), or visiting www.epa.gov/safewater.

TABLE 3—Results of 2011 Lead and Copper Testing

Inorganic Contaminants	MCLG	AL	Your Water (90th %) ^a	No. of Sample Exceeding the AL	Sample Date	Violation	Typical Source
Copper (ppm)	1.3	1.3	0.059	0 of 21	July 20 th 2011	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead (ppb)	0	15	0.00316	0 of 21	July 20 th 2011	No	Corrosion of household plumbing systems; Erosion of natural deposits

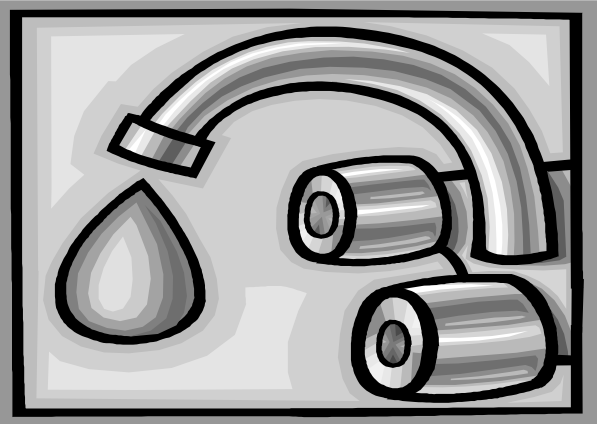


TABLE 4—Santa Fe County 2011 Water Quality

Contaminant	Units	MCL	MCLG	City Well Field ^e	Compliance Period 2011—2013		Sample Date	Buckman Tank ^f	Compliance Period 2011—2013		Sample Date	Canyon Road WTP	Compliance Period 2011—2013		Sample Date	Buckman RWTP	Compliance Period 2011—2013		Sample Date	Violation	Typical Source
					Low	High			Low	High			Low	High			Low	High			
Inorganic Contaminants																					
Arsenic	ppb	10	0	4.6	1.2	4.6	5-18-2011	1.6	1.6	1.6	6-17-2011	ND	-	-	6-17-2011	0.76	ND	0.76	2011	No	Erosion of natural deposits. Runoff from orchards. Runoff from glass and electronics production wastes.
Antimony	ppb	6	6	ND	-	-	-	ND	-	-	6-17-2011	ND	-	-	6-17-2011	0.38	ND	.038	2011		Discharge from Petroleum refineries; fire retardants; ceramics; electronics; solder
Barium	ppm	2	2	0.8	.11	0.8	8-24-2011	0.073	0.073	0.073	6-17-2011	.0086	.0086	.0086	6-17-2011	0.047	.041	.047	2011	No	Discharge from drilling wastes. Discharge from metal refineries. Erosion of natural deposits.
Fluoride	ppm	4	4	0.18	0.13	0.4	5-18-2011	0.25	0.25	0.25	6-17-2011	0.1	0.1	0.1	6-17-2011	0.35	.03	.035	2011	No	Erosion of natural deposits. Water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories.
Selenium	ppb	50	50	1.7	1.1	1.7	5-16-2011	ND	-	-	6-17-2011	ND	-	-	6-17-2011	1.4	1.2	1.4	2011	No	Discharge from steel/metals factories; Discharge from plastic and fertilizer factories.
Nitrate [as N]	ppm	10	10	7.5	2.3	7.5	8-24-2011	ND	-	-	6-17-2011	ND	-	-	6-17-2011	ND			2011	No	Runoff from fertilizer use. Leaching from septic tanks and sewage. Erosion from natural deposits.
Sodium	ppm	NA	NA	16	5.5	9.9	5-16-2011	18	18	18	6-17-2011	12	12	12	6-17-2011	24	20	24.00	2011	No	Erosion of natural deposits. Runoff from
Radioactive Contaminants																					
Compliance Period 2008—2014																					
Gross Alpha Emitters	pCi/L	15	0	0.98	.03	0.98	2009—2010	1.3	1.3	1.3	6-16-2011	0.6	0.6	0.6	6-16-2011	3	0.9	3	2011	No	Erosion of natural deposits.
Gross Beta/Photon Emitters	pCi/L	50 ^a	NA	3.0	0.9	3.0	2009—2010	2.4	2.4	2.4	6-16-2011	0.7	0.7	0.7	6-16-2011	6.8	1.9	6.8	2011	No	Decay of natural and man-made depos-
Radium 226/228	pCi/L	5	0	1.7	0.57	1.7	2009—2010	0.18	0.18	0.18	6-16-2011	0	0	0	6-16-2011	4.18	0.42	4.18	2011	No	Erosion of natural deposits.
Uranium	ppb	30	0	1.3	1.0	1.3	2009—2010	ND	-	-	6-16-2011	ND	-	-	6-16-2011	1.000	0.31	1.000	2011	No	Erosion of natural deposits.
Synthetic Organic Contaminants																					
Ethylene Dibromide	ppt	50 [#]	0	ND			8-24-2011	ND	-	-	6-17-2011	61	ND	61	6-17-2011	ND			2011	No	Discharge from petroleum refineries
Disinfectants & Disinfection By-Products																					
Bromate	Ppb	10	0	ND								ND				1	1	1	2011		By-product of drinking water chlorina-
Haloacetic Acids (HAAs)	ppb	60	NA	7.45	0	20.25	Sampled Quarterly in 2011	9.39 _{av}	0.13	30.5	Sampled Quarterly in 2011	12.19	0	21.93	Sampled Quarterly in 2011	6.4	ND	6.4	2011	No	By-product of drinking water chlorina-tion.
Total Trihalomethanes (TTHMs)	ppb	80	NA	13.43	0	26.7	Sampled Quarterly in 2011	18.21 _{av}	0.2	51.3	Sampled Quarterly in 2011	38.57	26.8	53.2	Sampled Quarterly in 2011	28	21.1	28	2011	No	By-product of drinking water chlorina-tion.
Surface Water Contaminants																					
Turbidity (highest single measurement)	NTU	TT = 0.3	0	NA	-	-	Not Required	NA	NA	-	-	0.35	NA	NA	Continuous	0.54	NA	NA	Continu-ous	No	Soil runoff.
Turbidity (lowest monthly % meeting limits)	NTU	TT = % <0.3 NTU	0	NA	-	-	Not Required	NA	NA	-	-	99.4%	99.4%	100%	Continuous	95.9%	95.9%	100%	Continu-ous	No	Soil runoff.
Total Organic Carbon (TOC)	ppm	TT = (35% - 45% Removal)	NA	NA	-	-	Not Required	NA	NA	-	-	39% to 70% Removal ^b	37	52	Monthly in 2009	NA	-	-	Not Re-quired	No	Naturally present in the environment.

Notes:

- a. EPA considers 50 pCi/L to be the level of concern for beta particles.
- b. The City complies with alternative compliance criteria to meet TOC removal requirements.
- c. The range represents the high and low values. Range values are not given if only one sample was taken during the range period.
- d. Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtra-tions system
- e. City well field: Alto, Agua Fria, Ferguson, Osage, Santa Fe, St. Michael & Torreon.
- f. Buckman wells 1-13 and Northwest well.

Key to Units, Terms and Abbreviations:

- NA: Not Applicable
- ND: Not Detected
- NS: Not Sampled
- NTU: Nephelometric Turbidity Units
- MNR: Monitoring not required, but recommended
- mg/l: Number of milligrams of substance per **liter of water**
- ppm: parts per million, or milligrams per liter (mg/l)

- ppm: parts per million, or milligrams per liter (mg/l)
- ppb: parts per billion, or micrograms per liter (µg/L/l)
- pCi/l: picocuries per liter (a measure of radioactivity)
- Range: The range represents the highest and lowest values. Range values are not provided if only one sample was taken during the range period
- TT: A Treatment Technique standard was set instead of a Maximum Contaminant Level.
- µg/l: Number of micrograms of substance per liter of water.